

WHAT IS CLAIMED IS:

1       1. A circuit board assembly comprising:  
2              an electronic component;  
3              a first circuit board;  
4              a first connector portion coupled to one of the electronic  
5 component and the circuit board;  
6              a second connector portion coupled to the other of the electronic  
7 component and the circuit board;  
8              a first alignment member coupled to the first connector portion; and  
9              a second alignment member coupled to the second connector  
10 portion, wherein the second alignment member is configured to interact with the  
11 first alignment member to align the first connector portion with the second  
12 connector portion in at least one direction prior to engagement of the first  
13 connector portion and the second connector portion, wherein the second  
14 alignment member extends relative to the second connector portion by a first  
15 extent prior to engagement of the first connector portion and the second  
16 connector portion and wherein the second alignment member extends relative to  
17 the second connector portion by a second shorter extent upon engagement of  
18 the first connector portion and the second connector portion.

1       2. The assembly of Claim 1, wherein the first alignment member  
2 includes a structure forming a detent and wherein the second alignment member  
3 includes a detent-engaging structure.

1       3. The assembly of Claim 2, wherein the detent has at least one  
2 tapered guide surface.

1       4. The assembly of Claim 1, wherein the second alignment member is  
2 movably supported between a first position in which the second alignment  
3 member extends relative to the second connector portion by the first extent and

4 a second position in which the member extends relative to the second connector  
5 portion by the second extent.

1 5. The assembly of Claim 4, wherein the second connector portion is  
2 resiliently biased towards the first position.

1 6. The assembly of Claim 5 including:  
2 a structure coupled to the first connector portion forming a bore  
3 movably receiving the second alignment member; and  
4 a spring received within the bore and biasing the second alignment  
5 member towards the first position.

1 7. The assembly of Claim 6, wherein the structure comprises a heat  
2 sink assembly.

1 8. The assembly of Claim 1, wherein the first alignment member is  
2 coupled to the circuit board and wherein the second alignment member is  
3 coupled to the electronic component.

1 9. The assembly of Claim 8, wherein the second alignment member is  
2 directly coupled to a heat sink assembly coupled to the electronic component.

1 10. The assembly of Claim 8, wherein the first alignment member  
2 includes a structure forming a bore configured to at least partially receive the  
3 second alignment member and wherein the bore terminates prior to extending  
4 into the circuit board.

1 11. The assembly of Claim 1, wherein the second alignment member  
2 has a first configuration and wherein the second alignment member extends  
3 relative to the second connector portion by the first extent and has a second  
4 different configuration when the second alignment member extends relative to  
5 the second connector portion by the second extent.

1           12. The assembly of Claim 1, wherein the first connector portion  
2 includes a plurality of pins and wherein the second connector portion includes a  
3 plurality of sockets configured to receive the plurality of pins.

1           13. The assembly of Claim 1, wherein the electronic component  
2 comprises a processor unit.

1           14. The assembly of Claim 1, wherein the electronic component  
2 comprises a second circuit board.

1           15. The assembly of Claim 1 including:  
2                 a third alignment member coupled to the first connector portion;  
3                 and  
4                 a fourth alignment member coupled to the second connector  
5                 portion, wherein the fourth alignment member is configured to interact with the  
6                 third alignment member to align the first connector portion with the second  
7                 connector portion prior to engagement of the first connector portion and the  
8                 second connector portion, wherein the fourth alignment member extends  
9                 relative to the second connector portion by a first extent prior to engagement of  
10               the first connector portion and the second connector portion and wherein the  
11               fourth alignment member extends relative to the second connector portion by a  
12               second shorter extent upon engagement of the first connector portion and the  
13               second connector portion.

1           16. The assembly of Claim 15 including:  
2                 a fifth alignment member coupled to the first connector portion;  
3                 and  
4                 a sixth alignment member coupled to the second connector portion,  
5                 wherein the sixth alignment member is configured to interact with the fifth  
6                 alignment member to align the first connector portion with the second connector  
7                 portion prior to engagement of the first connector portion and the second  
8                 connector portion, wherein the sixth alignment member extends relative to the

9 second connector portion by a first extent prior to engagement of the first  
10 connector portion and the second connector portion and wherein the sixth  
11 alignment member extends relative to the second connector portion by a second  
12 shorter extent upon engagement of the first connector portion and the second  
13 connector portion.

1 17. The assembly of Claim 16 including:

2 a seventh alignment member coupled to the first connector portion;

3 and

4 a eighth alignment member coupled to the second connector  
5 portion, wherein the eighth alignment member is configured to interact with the  
6 seventh alignment member to align the first connector portion with the second  
7 connector portion prior to engagement of the first connector portion and the  
8 second connector portion, wherein the eighth alignment member extends  
9 relative to the second connector portion by a first extent prior to engagement of  
10 the first connector portion and the second connector portion and wherein the  
11 eighth alignment member extends relative to the second connector portion by a  
12 second shorter extent upon engagement of the first connector portion and the  
13 second connector portion.

1 18. The assembly of Claim 17, wherein the electronic component is a

2 processor unit and wherein the processor unit is between each of the first  
3 alignment member, the third alignment member, the fifth alignment member and  
4 the seventh alignment member when the first connector portion and the second  
5 connector portion are connected.

1 19. A processor unit connecting system for use with a circuit board

2 having a first connector portion and a first alignment member, the system  
3 comprising:

4 a processor unit;

5 a second connector portion coupled to the processor unit and

6 configured to engage and connect to the first connector portion; and

7                   a second alignment member coupled to the second connector  
8 portion, wherein the second alignment member is configured to interact with a  
9 first alignment member to align the first connector portion with the second  
10 connector portion prior to engagement of the first connector portion and the  
11 second connector portion, wherein the second alignment member extends  
12 relative to the second connector portion by a first extent prior to engagement of  
13 the first connector portion and the second connector portion and wherein the  
14 second alignment member extends relative to the second connector portion by a  
15 second shorter extent upon engagement of the first connector portion and the  
16 second connector portion.

1                 20. The system of Claim 19, wherein the first alignment member  
2 includes a structure forming a detent and wherein the second alignment member  
3 includes a detent-engaging structure.

1                 21. The assembly of Claim 19, wherein the detent has at least one  
2 tapered guide surface.

1                 22. The assembly of Claim 19, wherein the second alignment member  
2 is movably supported between a first position in which the second alignment  
3 member extends relative to the second connector portion by the first extent and  
4 a second position in which the member extends relative to the second connector  
5 portion by the second extent.

1                 23. The assembly of Claim 22, wherein the second connector portion is  
2 resiliently biased towards the first position.

1                 24. The assembly of Claim 23 including:  
2                   a structure coupled to the first connector portion forming a bore  
3                   movably receiving the second alignment member; and  
4                   a spring received within the bore and biasing the second alignment  
5                   member towards the first position.

1           25. The assembly of Claim 24, wherein the structure comprises a heat  
2 sink assembly.

1           26. The assembly of Claim 19, wherein the second alignment member  
2 is directly coupled to a heat sink assembly coupled to the electronic component.

1           27. The assembly of Claim 19, wherein the second alignment member  
2 has a first configuration and wherein the second alignment member extends  
3 relative to the second connector portion by the first extent and has a second  
4 different configuration when the second alignment member extends relative to  
5 the second connector portion by the second extent.

1           28. The assembly of Claim 19, wherein the first connector portion  
2 includes a plurality of pins and wherein the second connector portion includes a  
3 plurality of sockets configured to receive the plurality of pins.

1           29. The assembly of Claim 19 including:  
2                 a third alignment member coupled to the first connector portion;  
3                 and  
4                 a fourth alignment member coupled to the second connector  
5 portion, wherein the fourth alignment member is configured to interact with the  
6 third alignment member to align the first connector portion with the second  
7 connector portion prior to engagement of the first connector portion and the  
8 second connector portion, wherein the fourth alignment member extends  
9 relative to the second connector portion by a first extent prior to engagement of  
10 the first connector portion and the second connector portion and wherein the  
11 fourth alignment member extends relative to the second connector portion by a  
12 second shorter extent upon engagement of the first connector portion and the  
13 second connector portion.

1           30. The assembly of Claim 29 including:  
2                 a fifth alignment member coupled to the first connector portion;  
3                 and

4                   a sixth alignment member coupled to the second connector portion,  
5   wherein the sixth alignment member is configured to interact with the fifth  
6   alignment member to align the first connector portion with the second connector  
7   portion prior to engagement of the first connector portion and the second  
8   connector portion, wherein the sixth alignment member extends relative to the  
9   second connector portion by a first extent prior to engagement of the first  
10   connector portion and the second connector portion and wherein the sixth  
11   alignment member extends relative to the second connector portion by a second  
12   shorter extent upon engagement of the first connector portion and the second  
13   connector portion.

1                 31. The assembly of Claim 30 including:

2                   a seventh alignment member coupled to the first connector portion;

3   and

4                   a eighth alignment member coupled to the second connector  
5   portion, wherein the eighth alignment member is configured to interact with the  
6   seventh alignment member to align the first connector portion with the second  
7   connector portion prior to engagement of the first connector portion and the  
8   second connector portion, wherein the eighth alignment member extends  
9   relative to the second connector portion by a first extent prior to engagement of  
10   the first connector portion and the second connector portion and wherein the  
11   eighth alignment member extends relative to the second connector portion by a  
12   second shorter extent upon engagement of the first connector portion and the  
13   second connector portion.

1                 32. The system of Claim 31, wherein the processor unit is between

2   each of the first alignment member, the third alignment member, the fifth  
3   alignment member and the seventh alignment member when the first connector  
4   portion and the second portion are connected.

1                 33. The assembly of claim 1, wherein the first alignment member

2   includes a structure forming a detent, wherein the second alignment member

3 includes a detent-engaging structure and wherein the detent-engaging structure  
4 is movable within the detent in a first direction and is immovable within the  
5 detent in a second direction perpendicular to the first direction.

1       34. A circuit board connection system for use with an electronic  
2 component having a first connector portion and a first alignment member, the  
3 system comprising:

4              a circuit board;  
5              a second connector portion coupled to the circuit board and  
6 configured to engage and connect to the first connector portion; and  
7              a second alignment member coupled to the second connector  
8 portion, wherein the second alignment member is configured to interact with the  
9 first alignment member to align the first connector portion with the second  
10 connector portion in at least one direction prior to engagement of the first  
11 connector portion and the second connector portion, wherein the second  
12 alignment member extends relative to the second connector portion by a first  
13 extent prior to engagement of the first connector portion and the second  
14 connector portion and wherein the second alignment member extends relative to  
15 the second connector portion by a second shorter extent upon engagement of  
16 the first connector portion and the second connector portion.

1       35. A circuit board assembly comprising:

2              an electronic component;  
3              a circuit board;  
4              a first connector portion coupled to one of the electronic  
5 component and the circuit board;  
6              a second connector portion coupled to the other of the electronic  
7 component and the circuit board; and  
8              means for aligning the first connector portion and the second  
9 connector portion in at least one direction prior to engagement of the first  
10 connector portion and the second connector portion, wherein the means does

11 not extend through the circuit board when the first connector portion is  
12 connected to the second connector portion.

1       36. The assembly of Claim 35, wherein the electronic component  
2 comprises a processor unit.

1       37. The assembly of Claim 35, wherein the first connector portion  
2 includes a plurality of pins and wherein the second connector portion includes a  
3 plurality of sockets configured to receive the plurality of pins.

1       38. A method for connecting the first connector portion of an electronic  
2 component to a second connector portion of a circuit board, the method  
3 comprising:

4             positioning a first alignment member coupled to one of the  
5 electronic component and the circuit board and extending beyond the second  
6 connector portion into engagement with a second alignment member coupled to  
7 the other of the electronic component and the circuit board prior to engagement  
8 of the first connector portion and the second connector portion to align the first  
9 connector portion with the second connector portion; and

10             moving at least a portion of the second alignment member relative  
11 to the second connector portion during connection of the first connector portion  
12 and the second connector portion to reduce an extent to which the second  
13 alignment member extends beyond the second connector portion.

1       39. A computing device comprising:  
2             a baseboard;  
3             a memory coupled to the baseboard;  
4             input/output coupled to the baseboard; and  
5             a processor system coupled to the baseboard, the processor  
6 system including:  
7                 a circuit board;  
8                 a central electronic control coupled to the circuit board;  
9                 a processor component;

10                   a first connector portion coupled to one of the processor  
11 component and the circuit board;  
12                   a second connector portion coupled to the other of the  
13 processor component and the circuit board;  
14                   a first alignment member coupled to the first connector  
15 portion; and  
16                   a second alignment member coupled to the second connector  
17 portion, wherein the second alignment member is configured to interact with the  
18 first alignment member to align the first connector portion with the second  
19 connector portion prior to engagement of the first connector portion and the  
20 second connector portion, wherein the second alignment member extends  
21 relative to the second connector portion by a first extent prior to engagement of  
22 the first connector portion and the second connector portion and wherein the  
23 second alignment member extends relative to the second connector portion by a  
24 second shorter extent upon engagement of the first connector portion and the  
25 second connector portion.